University of Gdańsk

Subject card

Subject name and code	Methods for the study of CNS, PG_00154584		
Field of study	Medical Biology		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
Education level	undergraduate studies	Subject group	
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	5	ECTS credits	1.0
Learning profile	academic	Assessment form	
Conducting unit	Katedra Fizjologii Zwierząt i Człowieka -> Faculty of Biology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Irena Majkutewicz	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

E-learning hours included: 0.0

Additional information:
Lecture with multimedia presentation

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	15	2.0	8.0	25

Subject objectives

Familiarizing the student with commonly used methods of studying the structure and function of the nervous system and the latest methods used in neurobiology.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLMEDL3_W16] explains the theoretical basis of experimental methods and lists the most important techniques of biological sciences that can be applied to medical biology and diagnostics	BM_W16 The student describes the most important methods and techniques used in neurobiology.	[SW4] test/exam - oral or written
[BIOLMEDL3_K01] understands the need for lifelong learning and to update his/her knowledge of medical biology and related disciplines	BM_K01 The student understands the need for lifelong learning, updating knowledge in the field of neurobiology and becoming familiar with new research methods on an ongoing basis.	[SK4] test/exam - oral or written

Subject contents

History of CNS research. Contemporary invasive and non-invasive study of CNS activity in humans or experimental animals: neurobrazing (fMRI, CT, PET), cerebral stereotaxy, brain stimulation, microinjections, experimental lesions, electrophysiology and electroencephalography, study of neurochemical processes (voltametry and microdialysis) combined with chemical analysis techniques (electrophoresis, mass spectrometry, HPLC), psychometry, in situ studies (histological techniques, immunohistochemistry and immunofluorescence), ELISA. Use of experimental animals - the most important legal regulations and ethical principles. Behavioral tests on rats or mice. Application of transgenic animals in neurobiology. Optogenetics. The course of clinical neurobiological examination - video presentation. Analysis of publications in the field of neurobiology in which modern methods were used.

Prerequisites and co-requisites

Fundamentals of Neuroanatomy, Neurophysiology

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written test	51.0%	100.0%

Recommended reading	Basic literature	Sadowski B. Zachowanie jako przedmiot badań. In: Biologiczne mechanizmy zachowania ludzi i zwierząt. pp. 30-40. Wydawnictwo Naukowe PWN, Warszawa, 2001 or 2005 or 2009. Lindsay KW., Bone I., Fuller G. Neurobiologia i Neurochirurgia. W.Kozubski (Ed.) Elsevier Urban & Partners Wrocław, Chapters I and II, pp 1-66.
	Supplementary literature	Altman J. 1974. Observational Study of Behavior: Sampling Methods. Behaviour 49: 227-266. Fronczyk K. Psychometria. Podstawowe zagadnienia + CD. Wydawnictwo: Vizja Press&IT, 2011. Mańkowska M. Wprowadzenie do psychometrii. Wydawnictwo: Katolicki Uniwersytet Lubelski, 2010.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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